

CLAIMS

1. A curable resin composition for optical waveguide comprising, as essential components,

a copolymer (A) of a radical-polymerizable compound (a) having an acid anhydrous group and/or an acidic group carrying a blocked acid group, and a radical-polymerizable unsaturated group in the molecule, with other radical-polymerizable compound (b),
a polymerizable unsaturated compound (B), and
a polymerization initiator (C).

10 2. The curable resin composition for optical waveguide according to Claim 1, wherein the acid group to be blocked is at least one group selected from carboxyl group, phosphoric acid group, sulfonic acid group and phenolic hydroxyl group.

15 3. The curable resin composition for optical waveguide according to Claim 1, wherein the blocking agent for blocking an acid group contains an ether-bonded olefinic unsaturated group.

4. A curable dry film for optical waveguide comprising, as essential components,

a copolymer (A) of a radical-polymerizable compound (a) having an acid anhydrous group and/or an acidic group carrying a blocked acid group, and a radical-polymerizable unsaturated group in the molecule, with other radical-polymerizable compound (b), the copolymer having a softening temperature of 0 to 300°C,

a polymerizable unsaturated compound(B) , and
a polymerization initiator (C).

25 5. The curable dry film for optical waveguide according to Claim 4, wherein the acid group to be blocked is at least one group selected from car-

boxyl group, phosphoric acid group, sulfonic acid group and phenolic hydroxyl group.

6. The curable dry film for optical waveguide according to Claim 4, wherein the blocking agent for blocking an acid group contains an ether-bonded
5 olefinic unsaturated group.

7. An optical waveguide comprising a lower clad layer, a core part and an upper clad layer wherein at least one of the lower clad layer, the core part and the upper clad layer is formed of a cured substance of a curable dry film for optical waveguide comprising, as essential components,

10 a copolymer (A) of a radical-polymerizable compound (a) having an acid anhydrous group and/or an acidic group carrying a blocked acid group, and a radical-polymerizable unsaturated group in the molecule, with other radical-polymerizable compound (b), the copolymer having a softening temperature of 0 to 300°C,
15 a polymerizable unsaturated compound(B) , and a polymerization initiator (C).

8. The optical waveguide according to Claim 7, wherein the difference in specific refractive index between the clad layer and the core part is identical or 0.1% or more.

20 9. A method for forming a core part for optical waveguide, comprising the following steps:

(1) a step of coating or pasting the curable resin composition for optical waveguide according to Claim 1 or the curable dry film for optical waveguide according to Claim 4 on a base material for optical waveguide, to provide a
25 resin layer for optical waveguide to be a core part of an optical waveguide,
(2) a step of irradiating light to cure a part to be a core part,
(3) a step of dissociating a blocking agent in an un-cured layer to generate

an acidic group, and

(4) a step of removing the un-cured layer by a development treatment to form a core part (the step (3) may be carried out simultaneously).